

WHAT IS CLAIMED IS:

1. A dye-sensitized solar cell comprising:  
a semiconductor electrode containing a dye and  
carboxylic compound, the dye and carboxylic compound  
5 being carried on a surface of the semiconductor  
electrode;  
a counter electrode; and  
an electrolyte composition provided between the  
semiconductor electrode and the counter electrode, and  
10 containing an electrolyte that contains iodine and  
molten salt of iodide.
2. The dye-sensitized solar cell according to  
claim 1, wherein the electrolyte composition further  
contains a gelling agent.
- 15 3. The dye-sensitized solar cell according to  
claim 2, wherein the gelling agent includes polyvinyl  
pyridine.
4. The dye-sensitized solar cell according to  
claim 1, wherein the electrolyte composition further  
20 contains inorganic salt of iodide.
5. The dye-sensitized solar cell according to  
claim 1, wherein the electrolyte composition further  
contains a viscosity-lowering agent containing at least  
one compound selected from the group consisting of salt  
25 of nitrogen-containing heterocyclic compound (excluding  
halide of nitrogen-containing heterocyclic compound)  
and salt of aliphatic compound.

6. The dye-sensitized solar cell according to claim 1, wherein the molten salt of iodide includes iodide of nitrogen-containing heterocyclic compound.

5 7. The dye-sensitized solar cell according to claim 1, wherein the molten salt of iodide includes 1-methyl-3-propyl imidazolium iodide.

8. The dye-sensitized solar cell according to claim 1, wherein the carboxylic compound includes at least one acid selected from the group consisting of  
10 acetic acid, propionic acid and butyric acid.

9. The dye-sensitized solar cell according to claim 1, wherein the electrolyte further contains water.

10. The dye-sensitized solar cell according to  
15 claim 9, the content of water in the electrolyte is in a range from 0.01 wt.% to 10 wt.%.

11. The dye-sensitized solar cell according to claim 1, wherein the semiconductor electrode contains titanium oxide particles.

20 12. The dye-sensitized solar cell according to claim 1, wherein the electrolyte composition is substantially in the form of a liquid or a gel.